

- 20 -

WHAT IS CLAIMED IS:

1. An extrusion molding apparatus comprising a housing, and a screw extruder including at least a screw built into the housing, a ceramic material being introduced into the housing and extruded by way of a forward end extrusion port by rotating the screw, wherein the screw built in the screw extruder includes a pressure portion, an extended portion arranged on the forward end extrusion port side of the pressure portion, and a kneading portion arranged between the pressure portion and the extended portion for kneading the ceramic material.
2. An extrusion molding apparatus according to claim 1, in which the pressure portion has the feed rate per revolution progressively decreased toward the forward end extrusion port, while the extended portion has the feed rate per revolution progressively increased toward the forward end extrusion port.
3. An extrusion molding apparatus according to claim 1 or 2, in which the relation $L/R \geq 1.0$ holds, where R is the outer diameter of the extended portion and the L the length thereof.
4. An extrusion molding apparatus according to claim 1 or 2, wherein the ratio of the feed rate per revolution at the back end ridge of the extended portion to the feed rate per revolution at the front end ridge of the pressure portion is not less than 1.02.
5. An extrusion molding apparatus according to claim 1 or 2, in which the ratio of the average feed rate at the ridge of the extended portion to the average feed rate at the ridge of the pressure portion is not less than 1.02.
6. An extrusion molding apparatus according to claim 1 or 2, in which the feed rate per revolution of the kneading portion is smaller than that of the forward end of the pressure portion and the back end of the extended portion.

- 21 -

7. An extrusion molding apparatus according to claim 1 or 2, in which a filter for filtering the ceramic material is arranged at the forward end extrusion port of the screw extruder, and the distance between the filter and the forward end of the screw is between 1 mm and 30 mm inclusive.

8. An extrusion molding apparatus according to claim 1 or 2, in which a mold for a honeycomb structure is arranged on the side of the screw extruder near to the forward end extrusion port, whereby the ceramic honeycomb structure can be molded.

9. An extrusion molding apparatus comprising a screw extruder including a housing having screws built therein adapted to rotate so that the ceramic material introduced into the housing is extruded by way of the forward end extrusion port,

wherein the screws built in the screw extruder include a pressure portion and an extended portion arranged at a position nearer to the forward end extrusion port than the pressure portion and having the feed rate per revolution progressively increased toward the forward end extrusion port.

10. An extrusion molding apparatus according to claim 9, in which the pressure portion has the feed rate per revolution progressively decreased toward the forward end extrusion port.

11. An extrusion molding apparatus according to claim 9 or 10, in which the relation $L/R \geq 1.0$ holds and where R is the outer diameter of the extended portion and L the length thereof.

12. An extrusion molding apparatus according to claim 9 or 10, in which the ratio of the feed rate per revolution at the back end ridge of the extended portion to the feed rate per revolution at the front end ridge of the pressure portion is not less than 1.02.

13. An extrusion molding apparatus according to claim 9 or 10, in which the ratio of the average feed

- 22 -

rate at the ridge of the extended portion to the average feed rate at the ridge of the pressure portion is not less than 1.02.

5 14. An extrusion molding apparatus according to claim 9 or 10, in which a filter for filtering the ceramic material is arranged at the forward end extrusion port of the screw extruder, and the distance between the filter and the forward end of the screws is between 1 mm and 30 mm inclusive.

10 15. An extrusion molding apparatus according to claim 9 or 10, in which a mold for a honeycomb structure is arranged on the side of the screw extruder near to the forward end extrusion port, whereby the ceramic honeycomb structure is molded.